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US Army Corps of Engineers
Walla Walla District
Attn: Lower Snake River Study
201 North Third Avenue
Walla Walla, WA 99362-1876

March 27, 2000

Dear Army Corps of Engineers:

Thank you for providing us with the opportunity to comment on the Corps' Draft Lower Snake River Juvenile Salmon Migration Feasibility Report (DEIS). These comments provide part of Idaho Rivers United's formal input; additional input on the DEIS is incorporated into the comments submitted by the Columbia & Snake Rivers Campaign/Save Our Wild Salmon (SOS) Coalition.

Idaho Rivers United (IRU) is a non-profit river conservation organization representing nearly 1,800 members from Idaho and the Northwest. We consider Snake River salmon recovery to be one of the most important conservation issues of the new century, and one of the most daunting challenges ever for the people of the Northwest.

In 1995, we were one of the first organizations in the nation to endorse breaching the four lower Snake River dams as the surest way, and likely the only way, to restore ESA-listed Snake River salmon and steelhead stocks to sustainable, harvestable levels. Accordingly, we support Alternative #4 in the DEIS – removing the earthen embankment sections of all four lower Snake dams – as the essential element in all comprehensive strategies that provide significant multi-species benefits.

Our comments are presented below in three major categories: **1) Science;** **2) Economics;** and **3) Social Impacts,** followed by a few **Conclusions.**

1) SCIENCE

A. Critique of the Anadromous Fish Appendix (A-Fish)

- A-Fish omitted any references to, or consideration of, both the PATH Weight of Evidence (WOE) process and the Scientific Review Panel (SRP) report. These omissions are critically important to a credible, defensible decision. Both of these major studies concluded that smolt transportation was unlikely to be a viable recovery tool for ESA-listed Snake River stocks, and largely discounted the hypothesis that the benefits of smolt transportation might be masked by extra confounding factors (e.g. ocean regime shift, BKD, etc.).

2 • A-Fish focuses on a narrow set of poorly-supported assumptions relating to the differential delayed mortality of transported and inriver-migrating spring/summer chinook smolts, and then concludes that the natural river option may not be significantly better than transportation-based options. NMFS goes on to claim that more research is needed to resolve key scientific uncertainties, and that waiting until this information is obtained does not significantly increase extinction risk to this stock. This conclusion is not supported by Mundy (1999), who shows that extinction risk for listed Snake River spring chinook is extremely high if recovery actions are further delayed.

3 • A-Fish largely ignored critical elements of the PATH report that compare survival rates of upriver and downriver stocks. These stocks experience closely similar life histories, but exhibit major differences in survival, measured by smolt-to-adult returns (SARs). These comparisons are a compelling indicator for determining whether any strategy (e.g. smolt transportation) has compensated, or can compensate in the future, for adverse effects of the lower Snake River dams. And, these data indicate clearly that compensation for the adverse effects of the dams has *not* been accomplished.

4 • The "D" (differential delayed mortality) values used in A-Fish are overly optimistic (95th percentile) for spring/summer chinook smolts. Whereas NMFS selected a D-value of 0.8, a more reasonable assumption based on actual observations of transportation-related delayed mortality would be 0.4 (IDFG 1999).

5 • NMFS states that further studies could reduce the uncertainty surrounding "D," but does not specify what types of experiments might accomplish this in a timeframe that does not subject listed stocks to an unacceptably high extinction risk. In addition, extremely small returns of wild spring/summer chinook adults and smolts may preclude estimating reach survivals and SARs for non-detected fish.

6 • NMFS does not speak of recovery in terms of the smolt-to-adult returns (SARs) that are needed to maintain (SAR = 2 percent)) and recover (median SAR = 4 percent) ESA-listed Snake River stocks. Independent peer-reviewers have concluded that "unless a minimum level of survival is maintained for ESA-listed stocks sufficient for them to at least persist, the issue of the effect of smolt transportation is moot (Mundy et al. 1994)."

B. Critique of the Cumulative Risk Initiative (CRI)

7 • CRI analyses for ESA-listed Snake River spring/summer chinook use only brood year data from a decade or two ago (1980-90 brood years), ignoring the 1991-94 brood year data that are now available. Because these populations have been declining at an accelerating rate, NMFS' selection choice of older data produces overly optimistic results (Oosterhout 2000) and understates the actual extinction risk.

8 • CRI models ignore population and environmental trends, focusing instead on average population growth rates. Focusing on average population growth rates from the 1980s has a similar effect to assuming that conditions today are no worse than they were a decade or more ago. This error further understates the actual extinction risk.

9 • CRI reaches an indefensible conclusion that improved habitat quality in Idaho headwaters rearing areas is the number one management tool for recovering Snake River spring and summer chinook populations. This defies empirical evidence, when spring/summer chinook in Idaho currently have 3,700 miles of high-quality spawning and rearing habitat available, with over 1,000 river miles located in pristine, federally-designated wilderness areas (IDFG 1998). Further, the health of resident native species (e.g. Cutthroat in the Middle Fork Salmon River) in these undisturbed watersheds confirms the habitat quality now available for anadromous fish.

If tributary habitat conditions were a major cause of salmon declines since the four lower Snake River dams were constructed, one would expect that stocks in relatively healthy tributaries would have outperformed stocks in degraded habitats. *That has not been the case; performance in all tributaries has been uniformly poor, regardless of habitat conditions* (IDFG 1998).

10 • CRI analysis erroneously uses smolt-to-adult ratios (SAR) that are four times higher than SARs actually observed for many years, and survivals to age one that are about one-fourth of what they are generally observed to be (Oosterhout 2000). This problem ripples through the CRI models and results, with the unrealistically high estimates of post-Bonneville smolt-to-adult survival forcing the models to use unrealistically low estimates of egg-to-smolt survival, which is inconsistent with available data. *When the correct survival data is used, CRI results line up more closely with PATH. Post-Bonneville survival, reflecting the delayed impacts and stresses of hydrosystem passage and/or juvenile transportation, becomes the most important management focus, rather than first-year freshwater survival.*

11 • In selecting a quasi-extinction definition of one or fewer fish in a stream for one year, NMFS chose one of the least conservative standards possible, not the most conservative one. The Federal Caucus concedes this on page 25 of the draft All-H paper: "The quasi-extinction threshold of one fish in one year may not be sufficiently conservative." *We strongly agree.*

To properly account for compensatory population dynamics - meaning that once a population has dropped below a certain level, the damage is irreversible and the population is doomed - CRI should have set a much higher quasi-extinction threshold. For example, the standard for population survival used by PATH was 150-300 fish, depending on the population. "Raising the bar" to reflect a more appropriate extinction

11
cont. threshold results in a much higher actual current extinction risk for individual stocks, and significantly increased extinction risk if recovery actions are delayed.

C. Miscellaneous comments

- 12
- The DEIS does not address the positive benefits that dam removal (and consequently, restored salmon and steelhead runs) has on resident fish in headwaters tributaries. Salmon and steelhead eggs provide resident fish such as bull trout and westslope cutthroat trout with significant additional food sources. Decaying salmon and steelhead carcasses fertilize otherwise nutrient-poor streams and lakes, resulting in an increased prey base (i.e., aquatic macroinvertebrates) for resident fish.
 - The DEIS fails to mention that resident fish in upriver storage reservoirs (e.g., Dworshak, Brownlee, Palisades, etc.) would also benefit from Snake dam removal. Because summer flow augmentation could then decrease or be eliminated altogether, fluctuations in reservoir levels of these storage projects can be reduced, and flows normalized in river reaches below storage facilities.
 - 13
 - The DEIS failed to mention that resident fish in upriver storage reservoirs may be harmed by deeper reservoir drafting and less natural flow regimes in headwaters areas, as additional flow augmentation must be substituted for lower Snake River drawdown to improve salmon survival in non-breaching scenarios.

2) ECONOMICS

- 14
- The DEIS does not account for the costs of compliance with the federal Clean Water Act in the lower Snake River if the dams remain in place. Federal documents estimate these costs exceed the costs of dam removal by \$125 million annually.
 - Despite frequent statements by the Federal Caucus (e.g., draft All-H paper) that additional water volumes from the upper Snake River must be acquired to achieve 1995/1998 BiOp target flows if the lower Snake dams remain in place (pp. 6, 9, 70, 71, 84), the DEIS does not include the costs of additional flow volumes in its economic analysis.

15, 16

The Bureau of Reclamation (1999) found that an additional 1 million acre-feet of water from the upper Snake River would result in the withdrawal of up to 643,000 acres of irrigated farmland from production, at a cost of \$151.3 million to \$1.3 billion annually, and the loss of 4,203 to 6,530 jobs.

- 17, 18
- The DEIS does not include in its analysis the cost of reparations that would likely have to be paid to Columbia River basin treaty tribes (Shoshone-Bannock, Nez Perce, Umatilla, Yakama, and Warm Springs) in the event that ESA-listed Snake River salmon

17, 18 | and steelhead go extinct. These reparations would reasonably include the value of lost
cont. | salmon fishing opportunities, lost cultural values, and the current value of over 40
million acres of ancestral lands the tribes ceded to the US government in return for the
right to fish "in perpetuity." NMFS has estimated that reparations could exceed \$10
billion; treaty tribes have estimated the cost of extinction to be much higher.

19 | • The DEIS assumes that over 2,000 farm-related jobs must be lost in the lower Snake
River area if the four dams are removed – the biggest single source of job losses
identified in DREW. These job losses can be avoided entirely with appropriate
investments to modify existing systems that draw irrigation water from the Ice Harbor
pool. IRU supports these investments to mitigate the changes needed for salmon.

20 | • The DEIS vastly understates the economic benefits of dam removal to the salmon
and steelhead sportfishing industry. According to a 1999 Idaho Fish and Wildlife
Foundation study, the benefits of a restored salmon and steelhead fishery in Idaho
alone would be \$172 million per year. A restored sport fishery in upriver areas in
eastern Oregon and Washington has apparently been omitted, along with restored
fisheries in the Columbia River estuary and coastal areas from northern California to
southeast Alaska.

21 | • The DEIS also fails to account for increased salmon and steelhead sportfishing
opportunities in the lower Columbia River that would result from dam removal. The
Northwest Sportfishing Industry Association currently estimates the sportfishing
industry to be worth \$3.0 billion dollars annually in the region, supporting 38,500 jobs.
Increased benefits to this significant economic sector, most of which is downstream
from the lower Snake River dams, must be added to the analysis.

22 | • The DEIS fails to include the potential loss of Idaho's \$90 million per year steelhead
fishery in options that do not include removal of the four lower Snake River dams. The
loss of this fishery would have major adverse impacts in Idaho communities like
Riggins, Orofino, Salmon, Challis, and Stanley.

23 | • The DEIS fails to account for reduced sportfishing revenues in the upper Snake River
(e.g., Henry's Lake, Henry's Fork, SF Snake River) that are likely if the lower Snake
dams are retained, and additional summer flow augmentation must then be used
alternatively to improve flows and salmon survival.

24 | • The DEIS fails to account for increased land values along rivers after dams are
removed, as salmon and steelhead runs are restored.

25 | • The DEIS fails to account for the savings of approximately \$10-35 million to US
taxpayers and ratepayers that result if the lower Snake River navigation waterway is no
longer maintained (ECONorthwest 1999 and Taxpayers for Common Sense 2000).

- 26 • The DEIS overstates the cost of replacement power needed if the dams are removed. The DEIS does not address energy conservation alternatives, or the reduction in consumption of electricity that invariably results if power costs increase.
- 27 • The DEIS dramatically understates the positive economic impacts that dam removal and restored salmon and steelhead runs would have on other sectors of the economy (e.g., high-tech companies) that rely on a high quality of life to attract employees from other parts of the country (ECONorthwest 1999).

3) SOCIAL IMPACTS

- 28 • The social impact analysis omits the adverse economic impacts to upriver communities in southern and eastern Idaho if lower Snake dams are retained, and as necessary flow improvements must then be achieved using additional water volumes from storage reservoirs and irrigation contributions. (These same communities would experience positive economic benefits from dam removal, with the increased tourism associated with restored fisheries.) We note that this omission is particularly disturbing, in view of the fact that several Idaho conservation groups as well as US Senator Mike Crapo (R-ID) requested that the Corps expand its social impacts analysis to encompass upriver communities. In the Corps' efforts to expand their economic focus, what happened to this essential information?
- 29 • The DEIS does not evaluate the adverse social impacts that will continue (or get worse) in communities that rely heavily on sport and commercial fishing if all dams remain in place and salmon runs continue to decline.

CONCLUSIONS

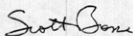
- 30 In sum, the Corps' DEIS focuses far too heavily on the adverse impacts of dam removal – greatly overstating the costs and underestimating the benefits. Perhaps even more importantly, the DEIS largely ignores the potentially higher costs of alternative salmon recovery strategies (e.g., augmenting salmon flows instead of breaching, costs of complying with the Clean Water Act, reparations to treaty tribes for the loss of salmon and steelhead stocks, etc.). These costs total between \$175 million and \$1.5 billion annually. With these costs included, retaining the four lower Snake River dams is potentially much more expensive than removing them. Finally, the DEIS fails to comprehensively study, account for, or address mitigation opportunities that would reduce or totally offset many of the adverse impacts of dam removal and prevent most potential job losses – particularly agricultural jobs affected by irrigation water pumped from the Ice Harbor Pool.

Thank you once again for the opportunity to comment on this critically important study. The decision regarding the lower Snake River dams will not only determine the survival chances of several of the greatest salmon and steelhead runs on earth, but it will also affect to some degree every resident of the Pacific Northwest – from Jackson Hole, Wyoming to Juneau, Alaska.

Idaho Rivers United firmly believes that we in the northwest can restore our salmon and steelhead runs to the sustainable, harvestable levels of the 1960s, while at the same time we protect and enhance the economic diversity and prosperity of the region. We believe that a vision that includes *both people and salmon* in the northwest can only be achieved if the four lower Snake dams are removed. The major challenge, therefore, is not to defend the status quo in the hydrosystem, or in any other area; it is, rather, to formulate a plan that adequately addresses the needs of people, while we make the changes we must to restore salmon.

We are confident that, if you follow the recommendations of the overwhelming majority of the region's scientists, and shift the Corps' considerable skill and focus to a comprehensive economic transition plan for lower Snake River communities, the Corps and the Administration will meet that challenge. In the process, you can establish a new benchmark for ecological restoration and better balance in the use of Snake/Columbia River resources in the regional economy. The public hearings recently conducted by the Federal Caucus demonstrate an unprecedented level of support for the changes necessary to fully restore Snake River salmon – including dam breaching.

We wish you the best of luck, and offer our help.



Scott Bosse
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